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| U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE  |   | ATTORNEYS DOCKET NUMBER<br><b>43795-00270 US</b>               |
| TRANSMITTAL LETTER TO THE UNITED STATES<br>DESIGNATED/ELECTED OFFICE (DO/EO/US)<br>CONCERNING A FILING UNDER 35 U.S.C. 371   |   | U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR<br><b>09/937282</b> |
| INTERNATIONAL APPLICATION NO.<br><b>PCT/US00/07679</b>   | INTERNATIONAL FILING DATE<br><b>23 MARCH 2000</b> | PRIORITY DATE CLAIMED<br><b>26 MARCH 1999</b>                  |
| TITLE OF INVENTION<br><b>WIRE-COIL PACKAGING DRUM WITH IMPROVED BOTTOM ASSEMBLY</b>  |   |  |
| APPLICANT(S) FOR DO/EO/US<br><b>Thomas D. COON and Randall ADAMS</b>   |   |  |
| Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:  |   |  |
| <ol style="list-style-type: none"> <li>1. <input checked="" type="checkbox"/> This is a <b>FIRST</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>2. <input type="checkbox"/> This is a <b>SECOND</b> or <b>SUBSEQUENT</b> submission of items concerning a filing under 35 U.S.C. 371.</li> <li>3. <input checked="" type="checkbox"/> This is an express request to begin national examination procedures (35 U.S.C. 371(f)). The submission must include items (5), (6), (9) and (24) indicated below.</li> <li>4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (Article 31).</li> <li>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371 (c) (2))           <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> has been communicated by the International Bureau.</li> <li>c. <input checked="" type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</li> </ol> </li> <li>6. <input type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).           <ol style="list-style-type: none"> <li>a. <input type="checkbox"/> is attached hereto</li> <li>b. <input type="checkbox"/> has been previously submitted under 35 U.S.C. 154(d)(4).</li> </ol> </li> <li>7. <input checked="" type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371 (c)(3))           <ol style="list-style-type: none"> <li>a. <input checked="" type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</li> <li>b. <input type="checkbox"/> have been communicated by the International Bureau.</li> <li>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has <b>NOT</b> expired.</li> <li>d. <input type="checkbox"/> have not been made and will not be made.</li> </ol> </li> <li>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</li> <li>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371 (c)(4)).</li> <li>10. <input type="checkbox"/> An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).</li> <li>11. <input checked="" type="checkbox"/> A copy of the International Preliminary Examination Report (PCT/IPEA/409).</li> <li>12. <input checked="" type="checkbox"/> A copy of the International Search Report (PCT/ISA/210).</li> </ol> <p><b>Items 13 to 20 below concern document(s) or information included:</b></p> <ol style="list-style-type: none"> <li>13. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.</li> <li>14. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.</li> <li>15. <input checked="" type="checkbox"/> A <b>FIRST</b> preliminary amendment.</li> <li>16. <input type="checkbox"/> A <b>SECOND</b> or <b>SUBSEQUENT</b> preliminary amendment.</li> <li>17. <input type="checkbox"/> A substitute specification.</li> <li>18. <input type="checkbox"/> A change of power of attorney and/or address letter.</li> <li>19. <input type="checkbox"/> A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821 - 1.825.</li> <li>20. <input type="checkbox"/> A second copy of the published international application under 35 U.S.C. 154(d)(4).</li> <li>21. <input type="checkbox"/> A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).</li> <li>22. <input type="checkbox"/> Certificate of Mailing by Express Mail</li> <li>23. <input type="checkbox"/> Other items or information:</li> </ol> |   |  |

U.S. APPLICATION NO. (IF KNOWN, SEE 37 CFR

INTERNATIONAL APPLICATION NO.

091937282

PCT/US00/07679

43795-00270 US

24. The following fees are submitted.

**BASIC NATIONAL FEE (37 CFR 1.492 (a) (1) - (5)) :**

- ☐ Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. .... **\$1000.00**
- ☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO. .... **\$860.00**
- ☐ International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO. .... **\$710.00**
- ☒ International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4). .... **\$690.00**
- ☐ International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4). .... **\$100.00**

**ENTER APPROPRIATE BASIC FEE AMOUNT =****\$690.00**

Surcharge of **\$130.00** for furnishing the oath or declaration later than months from the earliest claimed priority date (37 CFR 1.492 (e)). ☐ 20 ☐ 30

**\$0.00**

| CLAIMS  | NUMBER FILED | NUMBER EXTRA | RATE      |                 |
|---|--------------|--------------|-----------|-----------------|
| Total claims  | 38 - 20 =    | 18           | x \$18.00 | <b>\$324.00</b> |
| Independent claims  | 4 - 3 =      | 1            | x \$80.00 | <b>\$80.00</b>  |
| Multiple Dependent Claims (check if applicable). <input type="checkbox"/> |              |              |           | <b>\$0.00</b>   |

**TOTAL OF ABOVE CALCULATIONS = \$1,094.00**

☒ Applicant claims small entity status. (See 37 CFR 1.27). The fees indicated above are reduced by 1/2.

**\$0.00****SUBTOTAL = \$1,094.00**

Processing fee of **\$130.00** for furnishing the English translation later than months from the earliest claimed priority date (37 CFR 1.492 (f)). ☐ 20 ☐ 30 +

**\$0.00****TOTAL NATIONAL FEE = \$1,094.00**

Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) (check if applicable). ☐

**\$0.00****TOTAL FEES ENCLOSED = \$1,094.00**

Amount to be:  
refunded \$  
charged \$

- a. ☒ A check in the amount of **\$1,094.00** to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. \_\_\_\_\_ in the amount of \_\_\_\_\_ to cover the above fees. A duplicate copy of this sheet is enclosed.
- c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. **22-0585**. A duplicate copy of this sheet is enclosed.
- d. ☐ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

**NOTE:** Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:

William H. Oldach III  
Vorys, Sater, Seymour and Pease LLP  
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SIGNATURE

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NAME

42,048

REGISTRATION NUMBER

September 25, 2001

DATE

09/937282

JC16 Rec'd PCT/PTO SEP 25 2001

43795-00270 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Thomas D. COON and Randall ADAMS

Int'l. Appln. No.: PCT/US00/07679 (U.S. Nat'l Stage)

Filed: Herewith

For: WIRE-COIL PACKAGING DRUM WITH IMPROVED BOTTOM  
ASSEMBLY

\* \* \*

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents  
Box PCT  
Washington, D.C. 20231

Attention: DO/US

Sir:

Prior to examination, and prior to calculation of fees, please amend the  
above-identified application as follows:

IN THE CLAIMS:

Please amend Claim 21 as follows:

21. A bottom assembly according to Claim 16, wherein said anchoring  
member is a unitary molded plastic member.

A marked up version of this amended claim, as required by 37 C.F.R. §  
1.121(c)(1)(ii), is appended hereto.

Please cancel claims 22 and 23 without prejudice or disclaimer.

09/937282

Please add the following new claims:

28. A container for the packaging of wire coil comprising:

a container body; and

a bottom assembly disposed at a bottom of said container body, said bottom assembly comprising a bottom heading and an anchoring member mounted to said bottom heading, said anchoring member being inserted through a hole of said bottom heading and having portions disposed at opposite sides of said bottom heading so as to entrap said bottom heading therebetween, said anchoring member further having an anchoring portion constructed and disposed to anchor a hold-down system for container-received wire coil.

29. A container according to Claim 28, wherein said anchoring member comprises a plug having a generally cylindrical body provided with a laterally projecting flange portion and at least one resilient member, projecting laterally from said body and axially displaced from said flange portion, said plug being mounted to said bottom heading by insertion of said resilient member through said hole, said resilient member being constructed to resiliently deform inwardly toward said body during insertion through said hole and to return toward an initial configuration after insertion such that said bottom heading is entrapped between said flange portion and resilient member.

30. A container according to Claim 29, wherein said plug has a plurality of said resilient members circumferentially spaced from each other.

31. A container according to Claim 29, wherein said at least one resilient member has a bevelled circumferential edge.

32. A container according to Claim 29, wherein said plug has a laterally projecting resilient member axially spaced from said at least one resilient member to facilitate mounting of said plug to said bottom heading.

33. A container according to Claim 29, wherein said flange portion and said resilient member(s) are disposed substantially at opposite first and second axial ends of said plug body, respectively, and said plug further includes an anchoring portion projecting axially from said second end and having an opening for anchoring said hold-down system.

34. A container according to Claim 33, wherein said hold-down system includes an elastic loop member secured to said opening of said anchoring portion.

35. A container according to Claim 34, wherein said elastic loop member is secured to said opening by a tie passing through said opening and said elastic loop member.

36. A container according to Claim 28, wherein said anchoring portion of said anchoring member is formed with an opening for anchoring said hold-down system.

37. A container according to Claim 36, wherein said hold-down system includes an elastic loop member secured to said opening of said anchoring portion.

38. A container according to Claim 34, wherein said elastic loop member is secured to said opening by a tie passing through said opening and said elastic loop member.

39. A container according to Claim 37, wherein said bottom heading is formed of pasteboard.

40. A container according to Claim 29, wherein said plug body is at least partially hollowed out.

#### REMARKS

The above amendments are made to remove all multiple dependent claims from the case and to present new claims for consideration. All new claims are supported by the disclosure.

A check in the amount of \$1,094.00 to cover the basic national fee and additional claims fees is enclosed with Applicant's Transmittal Letter Under 35 U.S.C. § 371.

The Commissioner is hereby authorized to charge to Deposit Account No. 22-0585 any fees that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been requested separately, such extension is hereby authorized.

Respectfully submitted,

By: William H. Oldach III  
William H. Oldach III  
Reg. No. 42,048

WHO:dlb

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September 25, 2001

21. (Amended) A bottom assembly according to [any of Claims] Claim  
16[-20], wherein said anchoring member is a unitary molded plastic member.

09/25/01 - 743218



09/937282

Title: WIRE-COIL PACKAGING DRUM WITH IMPROVED BOTTOM  
ASSEMBLY

Inventors: Thomas E. Coon and Randall Adams

CROSS-REFERENCE TO RELATED APPLICATION:

This application claims the benefit of U.S. Application  
No. 60/126,338 filed March 26, 1999.

BACKGROUND OF THE INVENTION

This invention relates to containers or drums used for  
packaging wire coils, and more specifically, to an  
improved bottom assembly for such containers or drums.

Figs. 1 and 2 of the accompanying drawings illustrate a  
conventional wire-coil packaging drum 10 as disclosed in  
U.S. Patent No. 5,105,943 to Lesko et al. (incorporated  
herein by reference). The drum 10, which is ordinarily made  
of pasteboard, includes a cylindrical drum body 12 and a  
bottom assembly 16 designed to anchor a hold-down system (to  
be described below) for a wire coil 30 received in the drum.  
The hold-down system serves as a dunnage for the wire coil  
during transport—specifically by applying a compressive  
force to the top of the coil to reduce shifting of the coil  
due to vibration and other movement of the drum.

The drum bottom assembly 16 includes a bottom heading  
14 and a fixed-length strap 18 which is bent to form an

upwardly (as shown) projecting central loop 20. The opposite end portions 22 of the strap are secured to the upper surface of the bottom heading by stapling, and an annular disk 24 is glued to the upper surface so as to cover the opposite ends of the strap and also to increase the strength of the drum bottom.

The hold-down system includes an elastic cord 34 provided with a hook 36 and a loop 38 at its opposite ends, respectively. An optional tubular, pasteboard core member 28 may be fitted over the looped portion 20 of strap 18 and received in a central opening 24a of the annular disk, where it is secured by gluing. The wire coil 30 is ordinarily formed directly in the drum by feeding the wire from a processing machine into the drum while rotating the drum about its central axis. Once the coil has been formed, the hold-down system is completed by upwardly stretching the elastic cord 34, hooked to the central loop 20, and passing a rigid bar 32 through the loop 38. The bar thus provides continuous compressive engagement with the coil under the tension of the elastic cord. The bar may compress the coil through the intermediary of an upper annular disk 40, which may be constituted by a pair of disk halves 42, as shown. Upon completion of the hold-down system, the drum may be sealed by attachment of a suitable top heading 46.

Although effective for its intended purpose, the above-described arrangement of the Lesko et al. patent is subject to several disadvantages in practice. For example, the

fixed-length strap is attached to the upper surface of the bottom heading by staples or the like. This is a costly and labor-intensive operation. Further, this operation is performed before attaching the bottom heading to the drum body, thereby complicating the drum assembly process.

Other disadvantages stem from the fact that the elastic cord is not adjustable. As a result of this, the compressive force applied to the wire coil by the elastic cord cannot be adjusted. Further, the cord is limited to use only with drums within a certain height range. In order to accommodate drums over a wide range of heights, or to be able to adjust the amount of compressive force to be applied to a particular coil, it is necessary to maintain a supply of elastic cords having different lengths. This is inconvenient and leaves open the possibility that an assembly worker will mistakenly select an elastic cord of an incorrect length, so that the wire coil is not properly secured by the hold-down system.

One attempt to simplify the drum assembly process of the above-described arrangement is disclosed in U.S. Patent No. 5,819,934 to Cooper (also incorporated herein by reference). The Cooper patent describes an arrangement in which a fixed-length strap is attached to the central tubular core rather than to the drum bottom heading. This eliminates the need to secure a strap to the bottom heading before the heading is attached to the drum body. However, the attachment of the strap to the core still constitutes a

costly and labor intensive operation. In addition, the Cooper patent does not address the problems stemming from lack of adjustability of the elastic cord.

Accordingly, there remains a need for an improved construction that avoids the aforementioned disadvantages of the structure described in the Lesko et al. patent.

#### SUMMARY OF THE INVENTION

In accordance with one of its principal aspects, the present invention provides an improved bottom assembly in which the conventional bottom heading and strap arrangement are replaced by an arrangement including a bottom heading having a hole, and an anchoring member mounted to the bottom heading in cooperation with the hole such that an anchoring portion of the anchoring member is disposed to anchor a hold-down system for container-received wire coil.

In a preferred implementation, the anchoring member comprises a molded plastic, snap-mounted plug having a generally cylindrical body provided with a laterally projecting flange portion and with at least one preferably resilient member projecting laterally from the body and axially displaced from the flange portion. The plug is mounted to the bottom heading by insertion of the plug member through the aforementioned hole. The projecting member is constructed to resiliently deform inwardly toward the body during insertion through the hole and to return toward an initial configuration after insertion such that

the bottom heading is entrapped between the flange portion and the projecting member.

Also, in a preferred implementation, the conventional elastic cord is replaced by an elastic loop member, such as a rubber band, which is secured to the anchoring portion of the anchoring member by a tie. The tie may take any suitable form and in one preferred mode is constituted by a conventional cable tie having a ratchet-type closure mechanism, a lengthwise portion of the tie being passed through the elastic loop member and an opening of the anchoring portion prior to closure of the tie. A portion of the elastic loop member may be drawn up through a central tubular core of the drum (e.g., using a hook) for insertion of a rigid hold-down bar through the loop to compress the received wire coil. The bottom end of the core may be held in position by an annular disk as in the conventional drum. Use of the core and of the annular disk is optional, however.

Advantageously, the effective length of the elastic loop and tie assembly, and thus the compressive force exerted on the wire coil received in the drum, or the range of suitable drum heights, may be adjusted as desired by appropriately securing the tie in a desired length. For example, in the case of the aforementioned cable tie, the length may be set by passing a desired length of the tie through the ratchet closure.

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other aspects, features, and advantages of the invention will be more fully appreciated from the following detailed description of the preferred embodiments taken in conjunction with the accompanying drawings.

In the drawings, Fig. 1 is a cross-sectional view of a conventional wire-coil packaging drum.

Fig. 2 is an exploded perspective view of the bottom assembly and coil hold-down system of the drum in Fig. 1.

Fig. 3 is a cross-sectional view of an improved drum in accordance with the present invention.

Fig. 4 is a plan view of an anchoring member used in the bottom assembly of the drum in Fig. 3.

Fig. 5 is a fragmentary side elevation of the anchoring member showing suitable dimensions (in inches) for snap-mounting the anchoring member into a 2-inch diameter circular hole in a bottom heading having a thickness of 0.12 in.

Fig. 6 is a view similar to Fig. 5 illustrating the anchoring member snap-mounted to the bottom heading.

Fig. 7 is a plan view showing a bottom assembly and parts of the hold-down system suitable for use in the drum of Fig. 3.

Fig. 8 is a perspective view of the anchoring member having a cable tie secured thereto.

Fig. 9 is a partially sectional side view showing an

alternative form of the anchoring member suitable for use with the drum of Fig. 3.

Fig. 10 is a plan view of the anchoring member in Fig. 9.

#### 5     DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Fig. 3 shows a wire-coil packaging drum 10A incorporating an improved bottom assembly and hold-down system according to the present invention. The structural differences between the drums shown in Figs. 1 and 3 reside principally in the construction of the bottom assembly 50 and hold-down system. The following description will therefore focus on those portions of the drum.

The bottom assembly 50 comprises a drum bottom heading 60 having a central hole 62. The hole 62 is preferably circular, although it will be appreciated that other shapes may be suitable. An annular disk 64 may be mounted onto bottom heading 60 to provide strength, if desired, as in the conventional structure. An anchoring member 70 is mounted to the bottom heading 60 in cooperation with hole 62 such that an anchoring portion 76 of anchoring member 70 is disposed for anchoring a hold-down system for a wire coil 30, as will be explained shortly.

Referring additionally to Figs. 4-6, anchoring member 70 is preferably constituted by a snap-mounted plug having a body 71 of cross-sectional shape generally complementary to that of hole 62. In the form shown, plug body 71 is

generally cylindrical with a diameter slightly smaller than that of hole 62. The plug 70 is further provided with a laterally projecting flange portion 72 and at least one laterally projecting, preferably resilient member 74 at positions of the body axially spaced from flange portion 72, there being four such members disposed at equal circumferential intervals in the illustrative form.

Plug 70 is preferably formed as a unitary plastic molding, as of HDPE (high density polyethylene), polypropylene, or any other suitable plastic, and in such form can be manufactured inexpensively. To reduce material cost, plug body 71 may have a hollowed out configuration. As a result of this, and of the simplified assembly procedure to be explained below, a substantial cost saving can be achieved relative to the conventional structure previously described.

In order to mount plug 70 to bottom heading 60, the plug is inserted upwardly through hole 62 as indicated by an arrow A in Fig. 6. As plug 70 moves through hole 62, members 74 are resiliently deformed inwardly toward the plug body 71 by engagement with the sidewalls of the hole. Once members 74 have cleared the hole, they return (snap) to their initial configuration such that bottom heading 60 is trapped between the upper surface of flange portion 72 and the lower surfaces of members 74 as best seen in Fig. 6. Although not necessary, it is preferred that the surfaces of flange portion 72 and resilient members 74 that engage the



opposite surfaces of bottom heading 60 be parallel to the opposite surfaces of the bottom heading to maximize the area of engagement.

Plug 70 further comprises an anchoring portion 76,  
5 including a bridge-shaped member 77, which projects axially from the upper end of body 71, and an opening or slot 78 designed to receive a hold-down system.

A preferred form of the hold-down system is shown in detail in Figs. 7 and 8. In the form shown, the hold-down system comprises an elastic loop, such as a rubber band 80, and a tie 82. Tie 82 is preferably an adjustable tie, such as a conventional cable tie with a ratchet-type closure mechanism. Note that in the arrangement of Fig. 7, an annular disk 64a having a stepped configuration in its thickness direction is mounted to the bottom heading in order to provide increased strength toward the outside of the drum.

Prior to closure of the tie 82, a length of the tie is passed through both slot 78 of anchoring portion 76 and the  
20 loop of rubber band 80. Thus, upon closure of the tie, both the tie and the rubber band 80 are secured to plug 70 via anchoring portion 76. A portion of rubber band 80 may be drawn upwardly through the drum, after formation of wire coil 30, for insertion of hold-down bar 32 through the loop  
25 of the band, thereby enabling compression of the wire coil with bar 32.

It will be appreciated that because tie 82 is

adjustable, the effective length of the rubber band and tie assembly 80, 82 can be set as desired. Accordingly, the assembly can accommodate a wide range of drum heights and allows the compressive force on the wire coil can be set as desired.

Another approach to attaching rubber band 80 to plug 70 is simply to knot the band itself directly to anchoring portion 76. This can be accomplished by passing a first portion of the band through slot 78, back over bridge member 77 and through the remainder of the band, and then pulling the first portion tight so as to knot the band to bridge member 77. Of course, this approach does not provide the adjustability afforded by the use of tie 82.

Figs. 9 and 10 illustrate another plug 170, which is a variation of the first plug configuration described above. Like the first configuration, plug 170 has a generally cylindrical body 171 with a laterally projecting flange portion 172 at one end. In this second configuration, plug body 171 has a hollowed out design to define a recess 171a, thus reducing the amount of plastic required to produce the plug as previously noted. The other end portion of the plug is formed with a pair of laterally projecting resilient circumferential flanges 174a, 174b, which are axially spaced both from each other and from the flange portion 172. The outer diameters of flanges 174a, 174b are both slightly greater than the diameter of hole 62 in the drum bottom heading, and the outer diameter of flange 174b is also

slightly less than that of flange 174a. The flange 174b thus facilitates insertion of the plug into the hole of the drum bottom heading. To further facilitate insertion of the plug, the diametrically opposite outer surfaces of the bridge member 177 and the outer circumferential edges of the flanges 174a and 174b may be formed so as to lie on a common imaginary conical surface S as indicated in Fig. 9, thus giving the upper portion of the plug a generally conical profile.

The hold-down system is attached to the opening 178 of anchoring portion 176 in the same manner as in the drum of Fig. 3.

It will be appreciated that the plug and rubber band assembly of the invention as described above may be mounted to the bottom heading either before or after the bottom heading is joined to the drum body, thus increasing flexibility of the drum assembly process. Further, the snap-mount design of the plug greatly simplifies the assembly process because it avoids the need for more labor-intensive operations associated with the attachment of the strap in a conventional drum design.

While preferred embodiments of the invention have been shown and described, these embodiments are intended to be exemplary, not restrictive. It will be apparent to those skilled in the art that modifications can be made without departing from the principles and spirit of the invention, the scope of which is set forth in the appended claims. For

example, while a snap-mounted plug is preferred in practice of the invention, the plug may designed to be mounted to the drum bottom heading by press-fitting. Further, the plug need not completely cover the hole in the bottom heading, but is preferably designed to do so, as in the illustrative forms, in order to prevent (or at least substantially prevent) dirt and other foreign matter from entering the drum via the hole.

WHAT IS CLAIMED IS:

1           1. A bottom assembly for a container used in the  
2 packaging of a wire coil, said bottom assembly comprising a  
3 bottom heading and an anchoring member mounted to said  
4 bottom heading, said anchoring member being inserted through  
5 a hole of said bottom heading and having portions disposed  
6 at opposite sides of said bottom heading so as to entrap  
7 said bottom heading therebetween, said anchoring member  
8 further having an anchoring portion constructed and disposed  
9 to anchor a hold-down system for container-received wire  
10 coil.

1           2. A bottom assembly according to Claim 1, wherein  
2 said anchoring member is snap-mounted to said bottom  
3 heading.

1           3. A bottom assembly according to Claim 1, wherein  
2 said anchoring member is a unitary molded plastic member.

1           4. A bottom assembly according to Claim 1, wherein  
2 said anchoring member comprises a plug having a generally  
3 cylindrical body provided with a laterally projecting flange  
4 portion and at least one resilient member, projecting  
5 laterally from said body and axially displaced from said  
6 flange portion, said plug being mounted to said bottom  
7 heading by insertion of said resilient member through said  
8 hole, said resilient member being constructed to resiliently

9 deform inwardly toward said body during insertion through  
10 said hole and to return toward an initial configuration  
11 after insertion such that said bottom heading is entrapped  
12 between said flange portion and resilient member.

1 5. A bottom assembly according to Claim 4, wherein  
2 said plug has a plurality of said resilient members  
3 circumferentially spaced from each other.

1 6. A bottom assembly according to Claim 4, wherein  
2 said at least one resilient member has a bevelled  
3 circumferential edge.

1 7. A bottom assembly according to Claim 4, wherein  
2 said plug has a laterally projecting resilient member  
3 axially spaced from said at least one resilient member to  
4 facilitate mounting of said plug to said bottom heading.

1 8. A bottom assembly according to Claim 4, wherein  
2 said flange portion and said resilient member(s) are  
3 disposed substantially at opposite first and second axial  
4 ends of said plug body, respectively, and said plug further  
5 includes an anchoring portion projecting axially from said  
6 second end and having an opening for anchoring said hold-  
7 down system.

1 9. A bottom assembly according to Claim 8, wherein  
2 said hold-down system includes an elastic loop member  
3 secured to said opening of said anchoring portion.

1 10. A bottom assembly according to Claim 9, wherein  
2 said elastic loop member is secured to said opening by a tie  
3 passing through said opening and said elastic loop member.

1 11. A bottom assembly according to Claim 1, wherein  
2 said anchoring portion of said anchoring member is formed  
3 with an opening for anchoring said hold-down system.

1 12. A bottom assembly according to Claim 11, wherein  
2 said hold-down system includes an elastic loop member  
3 secured to said opening of said anchoring portion.

1 13. A bottom assembly according to Claim 9, wherein  
2 said elastic loop member is secured to said opening by a tie  
3 passing through said opening and said elastic loop member.

1 14. A bottom assembly according to Claim 12, wherein  
2 said bottom heading is formed of pasteboard.

1 15. A bottom assembly according to Claim 4, wherein  
2 said plug body is at least partially hollowed out.

1 16. A bottom assembly for a container used in

2 packaging a wire coil, said bottom assembly comprising a  
3 bottom heading having a hole, and an anchoring member  
4 mounted to said bottom heading and cooperating with said  
5 hole such that an anchoring portion of said anchoring member  
6 is disposed to anchor a hold-down system for a container-  
7 received wire coil.

1 17. A bottom assembly according to Claim 16, wherein  
2 said anchoring member is inserted in said hole and has  
3 portions disposed at opposite sides of said bottom heading  
4 so as to entrap said bottom heading therebetween.

1 18. A bottom assembly according to Claim 16, wherein  
2 said anchoring portion has an opening for anchoring said  
3 hold-down system.

1 19. A bottom assembly according to Claim 18, wherein  
2 said hold-down system includes an elastic loop member  
3 secured to said opening of said anchoring portion.

1 20. A bottom assembly according to Claim 19, wherein  
2 said elastic loop is secured to said opening by a member  
3 passing through said opening and said elastic loop.

1 21. A bottom assembly according to any of Claims 16-  
2 20, wherein said anchoring member is a unitary molded  
3 plastic member.



1           22. A bottom assembly according to any of Claims 1-21,  
2   and which is incorporated in a drum.

1           23. A drum assembly, comprising a container drum and a  
2   bottom assembly according to any of the preceding claims.

1           24. An anchoring assembly, comprising an anchoring  
2   member adapted to be mounted to a container drum bottom  
3   heading and an elastic loop member secured to said anchoring  
4   member by a tie passing through said elastic loop member.

1           25. An anchoring assembly according to Claim 24,  
2   wherein said tie is a cable tie having a ratchet-type  
3   closure mechanism.

1           26. A bottom assembly according to Claim 16, wherein  
2   said bottom heading is unitary.

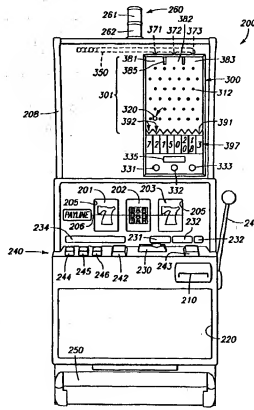
27. A bottom assembly according to Claim 1, wherein  
said bottom heading is unitary.

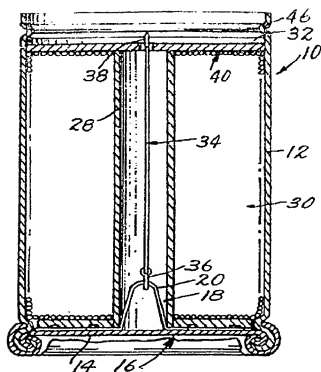
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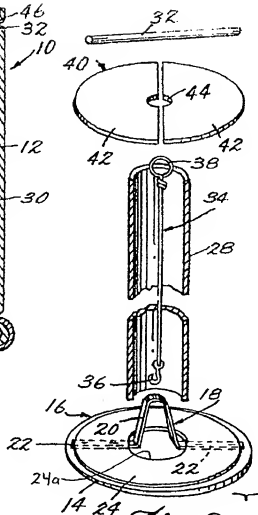


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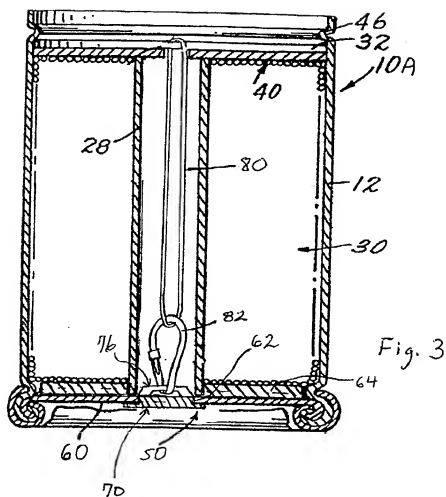
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| <p>(51) International Patent Classification <sup>6</sup>:<br/>A63F 3/00</p>   | <p>(11) International Publication Number: <b>WO 00/07679</b><br/>(43) International Publication Date: 17 February 2000 (17.02.00)</p>  |
| <p>(21) International Application Number: PCT/US98/16248<br/>(22) International Filing Date: 4 August 1998 (04.08.98)<br/>(63) Related by Continuation (CON) or Continuation-in-Part (CIP) to Earlier Application<br/>US 08/649,821 (CIP)<br/>Filed on 17 May 1996 (17.05.96)<br/>(71) Applicant (for all designated States except US): DIGIDEAL CORPORATION [US/US]; 811 South Sixth Street, Las Vegas, NV 89101 (US).<br/>(72) Inventors; and<br/>(75) Inventors/Applicants (for US only): SINES, Randy, D. [US/US]; Suite 812, 601 W. Main Avenue, Spokane, WA 99201 (US). KRISE, David, A. [US/US]; Suite 812, 601 W. Main Avenue, Spokane, WA 99201 (US).<br/>(74) Agents: GREGORY, Randy, A. et al.; Wells, St. John, Roberts, Gregory &amp; Matkin, Suite 1300, 601 W. First Avenue, Spokane, WA 99201-3828 (US).</p>  | <p>(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, ES, FI, FI (Utility model), GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published<br/>With international search report.</p> |
| <p>(54) Title: SLOT-TYPE GAMING MACHINE WITH VARIABLE DROP ZONE SYMBOLS</p>   |  |
| <p>(57) Abstract</p> <p>A game machine (2, 200) which includes a playing field (6, 301) traversed by objects, such as balls (320). The playing field can have plural drop zones (381-383) which can be selected by the player using defectors (108-110) that control where the balls are launched. Detectors (22, 392) indicate scoring positions assumed by the balls. A payline display (28, 335) displays scored events. A symbol selector is included to select symbols which are variably assigned to the scoring positions and displayed on displays (20, 397). The balls score symbols which can be displayed in the payline display and affect winning or bonus play. Game machine (200) includes traditional slot machine reels which works in conjunction therewith.</p>  |  |



*Fig. 1.*  
PRIOR ART



*Fig. 2.*  
PRIOR ART



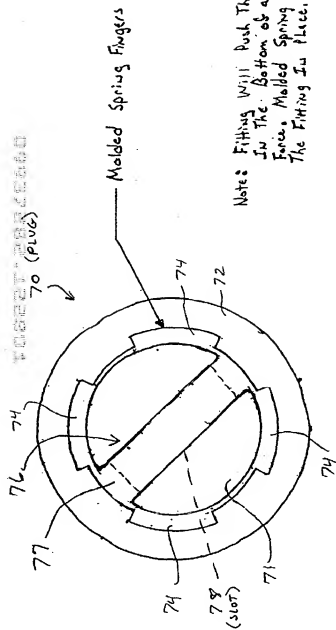


Fig. 4

Note: Fitting Will Push Through a 2" Hole in the Bottom of a Drum With Hood Force. Molded Spring Fingers will Keep the Fitting in Place.

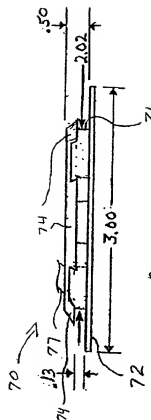


Fig. 5

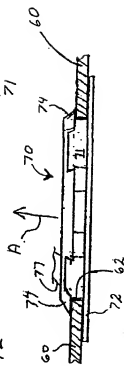
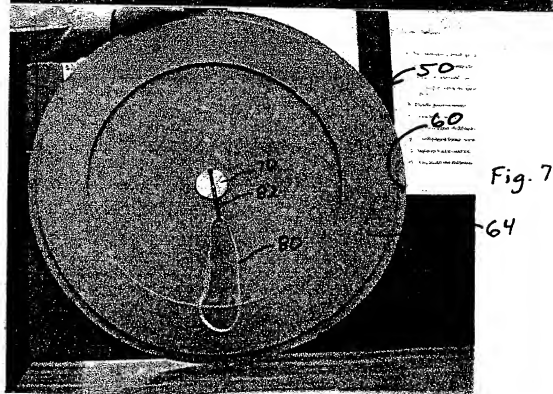
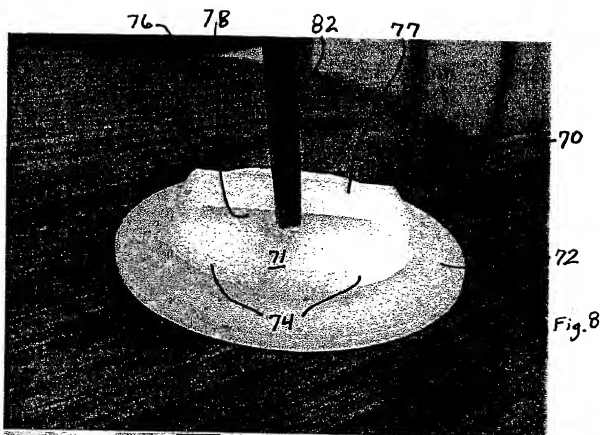


Fig. 6



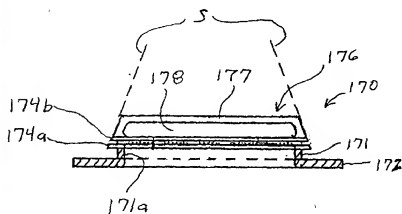
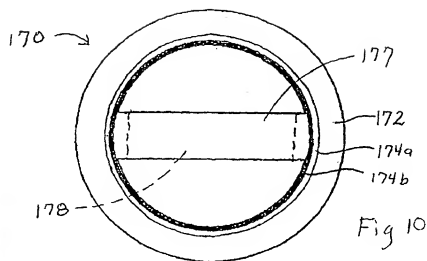


Fig. 9

Docket No  
43795-00270 US

## Declaration and Power of Attorney For Patent Application

### English Language Declaration

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

**WIRE-COIL PACKAGING DRUM WITH IMPROVED BOTTOM ASSEMBLY**

the specification of which

(check one)

☐ is attached hereto.

☒ was filed on March 23, 2000 as United States Application No. or PCT International

Application Number US00/07679

and was amended on \_\_\_\_\_

(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the United States Patent and Trademark Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations, Section 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, Section 119(a)-(d) or Section 365(b) of any foreign application(s) for patent or inventor's certificate, or Section 365(a) of any PCT International application which designated at least one country other than the United States, listed below and have also identified below, by checking the box, any foreign application for patent or inventor's certificate or PCT International application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application(s)

Priority Not Claimed

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐

(Number)

(Country)

(Day/Month/Year Filed)

☐



I hereby claim the benefit under 35 U.S.C. Section 119(e) of any United States provisional application(s) listed below:

|                          |                       |
|--------------------------|-----------------------|
| <u>60/126,338</u>        | <u>March 26, 1999</u> |
| (Application Serial No.) | (Filing Date)         |

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| (Application Serial No.) | (Filing Date) |

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| _____                    | _____         |
| (Application Serial No.) | (Filing Date) |

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|                          |               | (patented, pending, abandoned) |

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| _____                    | _____         | _____                          |
| (Application Serial No.) | (Filing Date) | (Status)                       |
|                          |               | (patented, pending, abandoned) |

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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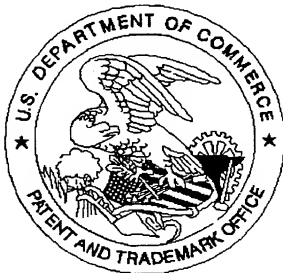
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20

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*Drawings figure 6, 7 are  
very dark.*

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